



April 2015

BUREAU OF LAND MANAGEMENT

More Information Needed to Implement the Helium Stewardship Act of 2013

Accessible Version

GAO Highlights

Highlights of [GAO-15-394](#), a report to congressional requesters

Why GAO Did This Study

Helium is a key nonrenewable resource with a variety of uses. The federal government maintains an underground reservoir near Amarillo, Texas, for the storage of both federally owned helium and helium owned by private companies. The Helium Stewardship Act of 2013 establishes a phased process for the privatization of the federal helium reserve in a competitive market fashion. As part of that process, BLM conducted an auction and two sales of federal helium in the summer of 2014.

GAO was asked to assess BLM's implementation of the act. This report examines (1) the outcomes of BLM's summer 2014 helium auction and sales, (2) BLM's administration of the act's tolling provision (tolling refers to a helium refiner processing or refining another party's crude helium for an agreed upon price), and (3) upcoming decisions BLM faces as it continues implementing the act. GAO reviewed the 2013 act, BLM's auction and sales results, and tolling agreement reports; interviewed BLM and other Interior officials and representatives of 12 of the 13 refiners and nonrefiners that registered to participate in the auction.

What GAO Recommends

GAO recommends that BLM (1) issue a rule to, among other things, collect information about refiners' attempts to negotiate tolling agreements and (2) assess and select an auction method that would maximize revenue. Interior disagreed with the first recommendation because it believes existing mechanisms provide needed information, and agreed with the second. GAO continues to believe that its recommendation is valid.

View [GAO-15-394](#). For more information, contact Anne-Marie Fennell at (202) 512-3841 or fenella@gao.gov.

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What GAO Found

In the summer of 2014, refiners purchased all the helium offered in the Department of the Interior's Bureau of Land Management's (BLM) first-ever competitive helium auction at higher than expected prices. Two refiners purchased all 93 million cubic feet of helium that was auctioned at an average price of \$161 per thousand cubic feet—significantly above the prices offered by most other bidders. BLM, refiners, and nonrefiners identified possible reasons for the auction's outcome, including that refiners had an advantage at the auction because their costs for refining crude helium were lower than those of nonrefiners. After the auction, BLM sold more than 1 billion cubic feet of helium in two sales that were restricted to refiners. Since BLM used the average auction price to help set the sales price, the sales price also was higher than expected.

BLM has taken steps to help improve reporting by refiners, but the agency does not have full assurance that refiners are satisfying the tolling provision. The tolling provision requires refiners, as a condition of sale or auction, to make excess refining capacity available at commercially reasonable rates to certain nonrefiners. BLM officials said that one way refiners can satisfy the tolling provision is to attempt to negotiate tolling agreements. The act does not require refiners to report information to BLM about their attempts to negotiate agreements that do not result in signed agreements, so the reporting of this information is voluntary. BLM requested that refiners report this information, but the refiners' responses were inconsistent. For example, some refiners reported that they had attempted to negotiate agreements but did not report details about volume or rates offered. Officials from Interior's Office of the Solicitor said BLM may need to issue a rule to require refiners to report about their attempts to negotiate tolling agreements. However, BLM officials said they do not intend to issue such a rule because it is a time-consuming process that might delay future auctions and sales. Nevertheless, without information about refiners' attempts to negotiate agreements, BLM cannot determine the extent to which refiners with excess capacity are satisfying the tolling provision.

BLM faces a number of decisions about its continued implementation of the act, including decisions related to the auction of a portion of the helium BLM will make available for delivery during fiscal year 2016. Specifically, BLM officials said they plan to contract with a third party to conduct a survey of helium transactions that will form the basis for the fiscal year 2016 minimum auction price, but they have not determined the scope of the survey. Also, BLM officials said they are considering increasing the amount of helium the agency will auction for fiscal year 2016 above the amount set in the act because they think it will increase competition at the auction. In addition, BLM faces a decision in selecting a method for conducting the fiscal year 2016 auction. The act requires BLM to use an auction method that maximizes revenue. BLM officials said they considered multiple methods before selecting the live auction method used for the agency's first auction, but they did not assess the methods based on maximizing revenue. As of February 2015, BLM officials had not evaluated various methods, such as sealed bids or simultaneously auctioning multiple lots. Without assessing auction method options based on revenue generation, BLM does not have assurance that a live auction will maximize revenue as required.

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Abbreviations

BLM	Bureau of Land Management
Interior	Department of the Interior

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April 16, 2015

The Honorable Lisa Murkowski
Chairman
Committee on Energy and Natural Resources
United States Senate

The Honorable Rob Bishop
Chairman
The Honorable Raúl M. Grijalva
Ranking Member
Committee on Natural Resources
House of Representatives

The Honorable Alan Lowenthal
Ranking Member
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
House of Representatives

Helium is an important nonrenewable natural resource with a variety of uses. Federal government uses for helium include the space program, national security applications, and scientific research. Private industry uses for it include medical instruments, controlled atmospheres used in manufacturing, and leak detection. For many of its uses, helium has no substitute.

The federal government has been extensively involved in the production, storage, and use of helium since the early part of the 20th century.¹ During the 1960s and early 1970s, to fulfill the conservation objective of the Helium Act Amendments of 1960,² the Department of the Interior (Interior) purchased about 34 billion cubic feet of helium from private

¹The federal government and private sector cooperatively produced helium before 1925, specifically for military uses. The Helium Act of 1925, as amended, assigned responsibility for producing helium for federal users to Interior's Bureau of Mines. Pub. L. No. 68-544, 43 Stat. 1110 (1925) (originally codified at 50 U.S.C. §§ 161-166 and currently codified as amended at 50 U.S.C. §§ 167-167q). From 1937 until 1960, the Bureau of Mines was the sole producer of helium.

²Pub. L. No. 86-777, 74 Stat. 918 (1960).

crude helium producers.³ Then, under the Helium Privatization Act of 1996, Interior was required to offer for sale all but 600 million cubic feet of that crude helium by January 1, 2015.⁴ In February 2013, we testified that there would likely be substantially more than 600 million cubic feet of crude helium remaining on the January 2015 deadline, since not all of the helium offered for sale under the 1996 act had sold.⁵

In October 2013, the Helium Stewardship Act of 2013 was enacted.⁶ The 2013 act is intended to complete the privatization of the federal helium reserve in a competitive market fashion that ensures stability in the helium markets, while protecting the interests of American taxpayers, among other things. The 2013 act establishes a phased process through fiscal year 2021 for Interior to dispose of the remaining helium. Phase A of the 2013 act is a transition period of helium sales; Phase B introduces competitive auctions in addition to sales; and the remaining phases provide for continued access to federal users and eventual disposal of assets, respectively. Interior's Bureau of Land Management (BLM) is responsible for managing the federal helium program, including implementing the 2013 act.

The federal government has a reserve of crude helium near Amarillo, Texas, that is stored in an area of a natural gas field that has a naturally occurring underground structural dome. In addition to storing the federal crude helium, this underground reservoir also holds crude helium that private companies have previously purchased from BLM but have not taken delivery of in accordance with storage contracts between the companies and the agency. BLM delivers crude helium from the storage reservoir through a pipeline to the private companies that are connected to it. As of February 2015, four such companies were receiving crude helium from BLM through the pipeline and refining it.⁷ These companies

³Crude helium is a gas containing approximately 50 percent to 85 percent helium.

⁴Pub. L. No. 104-273, 110 Stat. 3315 (1996).

⁵GAO, *Helium Program: Urgent Issues Facing BLM's Storage and Sale of Helium Reserves*, [GAO-13-351T](#) (Washington, D.C.: Feb. 14, 2013). As of the date of this report, BLM had not published the volume of storage remaining in the reserve as of January 1, 2015. According to BLM's most recently published data, as of September 2014, approximately 7.8 billion cubic feet of federal crude helium remained in the reserve.

⁶Pub. L. No. 113-40, 127 Stat. 534 (2013), *codified at* 50 U.S.C. §§ 167-167q.

⁷Refined helium has a varying purity of 99.99 percent to 99.9999 percent helium.

are commonly referred to as “refiners.” Nine other companies—commonly referred to as “nonrefiners”—have either purchased relatively small volumes of crude helium from BLM or have expressed an interest in buying federal crude helium. The nonrefiners, however, cannot receive the crude helium they purchase directly because they are not connected to the pipeline. Instead, each nonrefiner must enter into an agreement with a refiner, whereby the refiner accepts delivery of the crude helium and processes it into pure helium on the nonrefiner’s behalf at an agreed upon price. This practice is referred to as “tolling.” The 2013 act contains a provision that requires refiners, as a condition of sale or auction, to make excess refining capacity of helium available at commercially reasonable rates to certain nonrefiners. In this report, we refer to this condition as the act’s tolling provision. If a refiner and nonrefiner do not agree on terms for tolling, the act does not require the refiner to toll. As part of its responsibilities for managing the federal helium program, BLM has taken actions to ensure that refiners have satisfied the tolling provision, including asking refiners to report information about their excess refining capacity and tolling agreements.

In July 2014, we testified before the House Natural Resources Subcommittee on Energy and Mineral Resources about BLM’s initial actions to implement the 2013 act.⁸ Later that month, after the hearing, BLM held its first-ever competitive auction for crude helium, offering about 93 million cubic feet of helium—or 10 percent of the total volume of helium that BLM planned to make available for auction and sale for delivery in fiscal year 2015—to qualified bidders, both refiners and nonrefiners. Two weeks later, in August 2014, in two sales, BLM sold the remaining helium that was to be made available for delivery in fiscal year 2015 and a portion of the helium to be made available for delivery in fiscal year 2016. Those two noncompetitive sales offered a total of about 1,085 million cubic feet of crude helium to refiners.

You asked us to review BLM’s continued implementation of the Helium Stewardship Act of 2013. This report examines (1) the outcomes of BLM’s helium auction and sales held during the summer of 2014, (2) BLM’s administration of the act’s tolling provision, and (3) the extent to which

⁸GAO, *Helium Program: BLM’s Implementation of the Helium Stewardship Act of 2013*, [GAO-14-751T](#) (Washington, D.C.: July 15, 2014).

BLM faces decisions related to upcoming helium auctions, sales, and storage contracts as it continues implementing the act.

To address these three objectives, we reviewed the 2013 act and documentation of BLM's completed and planned implementation actions, including a July 2014 *Federal Register* notice of BLM's implementation of the auction and two sales held in the summer of 2014.⁹ We interviewed BLM officials associated with the federal helium program at BLM's headquarters in Washington, D.C.; BLM's New Mexico State Office in Santa Fe, New Mexico;¹⁰ and BLM's Amarillo Field Office in Amarillo, Texas, where the federal helium program is based. We also interviewed attorneys in Interior's Office of the Solicitor in Washington, D.C., and in the Southwest Regional Office in Albuquerque, New Mexico, who work with the federal helium program. In addition, we interviewed representatives from 12 of the 13 companies that registered with BLM to participate in the July 2014 auction, including the 4 refiners and 4 nonrefiners that had participated in helium sales in recent years, and 4 companies that had expressed an interest in purchasing helium for the first time and connecting to BLM's pipeline. One company did not respond to our request for an interview.

To address the first objective, we reviewed BLM's documentation of the results of the July 2014 auction and the two sales conducted in August 2014. We also observed a recording of BLM's July 2014 auction to identify winning and losing bids made by auction participants. We assessed the potential effects of BLM's July 2014 *Federal Register* notice on refiners as they prepared to participate in the auction. Specifically, we compared the volumes of helium that refiners were likely to receive in fiscal year 2015—based on the agency's formula for delivering helium contained in the notice—with the volumes of helium refiners received prior to fiscal year 2015. To address the second objective, we reviewed the act's tolling provision. We examined two reporting forms that BLM posted to its website in conjunction with the July 2014 *Federal Register* notice: one used to collect information from refiners about their refining capacity and the other to collect information about refiners' tolling

⁹79 Fed. Reg. 42808 (July 23, 2014).

¹⁰BLM's New Mexico State Office has jurisdiction over Kansas, Oklahoma, and Texas, in addition to New Mexico. As such, it has jurisdiction over the Amarillo Field Office in Amarillo, Texas, where the helium program is administered.

agreements. We compared the refining capacity reporting form to an earlier draft of the form to assess changes BLM made. We also examined information refiners submitted to BLM to identify occurrences of signed tolling agreements and attempts to negotiate agreements during fiscal year 2014. We also reviewed written comments BLM received in response to a notice of proposed action that preceded the agency's July 2014 *Federal Register* notice. To address the third objective, we reviewed the provisions in the act that BLM is to continue to implement. We examined BLM planning documents, including agendas and minutes from internal BLM meetings where officials discussed the fiscal year 2016 auction and sale; we also listened to some of these internal meetings by phone. We reviewed a draft of BLM's new storage contract and discussed revisions to the contract with BLM officials.

We conducted this performance audit from August 2014 to April 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Helium is an inert element that occurs naturally in gaseous form and has a variety of uses because of its unique physical and chemical characteristics.¹¹ For example, helium has the lowest melting and boiling points of any element, and as the second lightest element, gaseous helium is much lighter than air. Certain natural gas fields contain a relatively large amount of naturally occurring helium that can be recovered as a secondary product. To do so, the helium is separated from the natural gas and stored in a concentrated form that is referred to

¹¹Helium in this report refers to helium-4, the most abundant naturally occurring helium isotope. Helium-3, which has its own supply and demand issues, is not the focus of this report. The Helium Stewardship Act of 2013 requires the Secretary of the Interior to cooperate with the Secretary of Energy on any assessment or research related to extraction and refining of helium-3. The act also authorizes the Secretary of the Interior to conduct a helium-3 feasibility study, in consultation with the Secretary of Energy. The Secretary of the Interior was required to submit a report on the results of these assessments to relevant congressional committees by October 2, 2014. 50 U.S.C. § 167p. According to a knowledgeable BLM helium official, based on projected demand for helium-3, the agency has not conducted either assessment, but it will work with the Department of Energy to develop appropriate studies as needed.

as crude helium because it has yet to go through the final refining process.

As of September 30, 2013, the federal helium program stored about 10.84 billion cubic feet of crude helium—roughly 9 billion cubic feet owned by the government, and the rest owned by private companies—in an underground storage reservoir near Amarillo, Texas. BLM used a geologic model to identify the most efficient way to extract this remaining helium from storage. As of mid-2014, BLM estimated that it could make available for delivery from the reservoir roughly 7 billion cubic feet of helium over the life of the act, from fiscal year 2014 through fiscal year 2021.

After private companies—refiners or nonrefiners—purchase helium from BLM and pay for it, the official ownership of the helium is transferred from BLM to the company on the first day of the month after payment is received, and it becomes part of the privately owned inventory in federal storage. BLM stores and then delivers the privately owned helium through the pipeline to refiners in accordance with the storage contracts it has with the companies. As of February 2015, BLM held storage contracts with 11 companies,¹² and these storage contracts will expire at the end of fiscal year 2015. The storage contracts govern the storage, withdrawal, and delivery of helium from the federal reservoir and associated fees. BLM officials explained that they calculate fees under the current contracts based on the total amount necessary to recover BLM's costs. The ability for companies to purchase crude helium and then leave it stored in the federal storage reservoir until it is delivered at a later time is a unique feature of the federal helium program compared with other sources of helium in the world, which typically require a purchaser to accept delivery of the helium when it is extracted or pay for it even if delivery is not accepted upon extraction.

When the Helium Stewardship Act of 2013 was enacted, the global helium market had been operating under conditions of tight supplies for multiple years. From 2010 to mid-2014, refiners requested delivery of volumes of helium through the BLM pipeline that would have exceeded

¹²The 11 companies are 4 refiners connected to the pipeline; 4 nonrefiners; and 3 companies that do not store helium in the storage reservoir but are connected to the pipeline in order to transport helium from private natural gas fields to the 4 refiners connected to the pipeline.

BLM's production capacity. Under these conditions, refiners accepted delivery of the maximum amount of helium that BLM could produce. However, market conditions changed in 2014: supply increased due to additional production from private sources in other parts of the world.¹³ Because these additional supplies became available, starting in mid-2014, refiners requested delivery of volumes of helium that were less than BLM's production capacity. A January 2015 U.S. Geological Survey report estimated that helium produced from the federal storage reservoir represented 29 percent of the total estimated production of helium in the United States and 17 percent of the total estimated helium production worldwide in fiscal year 2014.¹⁴

The 2013 act significantly changed the federal helium program. The 1996 act required Interior to sell a certain amount of helium in the federal helium reserve and to set helium sale prices to cover the reserve's operating costs and to produce an amount sufficient to repay the debt associated with the initial purchase of the helium. According to the 2013 act's legislative history, however, the purpose of the 2013 act is to complete the privatization of the federal helium reserve in a competitive market fashion that ensures stability in the helium markets while protecting the interests of the taxpayers.¹⁵ The 2013 act introduces new provisions, including the following:

- **Phased implementation.** The act establishes four phases for the sale and auction of crude helium from, and eventual closure of, the reserve—Phase A: allocation transition; Phase B: auction implementation; Phase C: continued access for federal users; and Phase D: disposal of assets. Phase D is to be completed no later than September 30, 2021. 50 U.S.C. § 167d(a)-(d).
- **Tolling.** If a refiner and nonrefiner do not agree on terms for tolling, the act does not require refiners to toll. However, as a condition of sale or auction to a refiner in Phase A and B, the refiner must make excess refining capacity of helium available at commercially reasonable rates to persons who acquire helium from BLM after the

¹³According to a U.S. Geological Survey report, the private helium sources are located in Algeria and Qatar.

¹⁴U.S. Geological Survey, *Mineral Commodity Summaries*, January 2015.

¹⁵H.R. Rep. No. 113-42, at 8 (2013).

act's enactment.¹⁶ 50 U.S.C. § 167d(b)(8)(B). According to the act's legislative history, this condition was intended to maximize participation in Phase A and B helium sales.¹⁷ The act does not define excess refining capacity or commercially reasonable rates. We refer to the condition of sale or auction as the act's tolling provision.

- **Disclosure requirement and qualifying domestic helium transactions.** The act requires BLM to require all persons that have storage contracts with BLM to disclose, on a strictly confidential basis, (1) the volumes and associated prices of all crude and pure helium purchased, sold, or processed by persons in qualifying domestic helium transactions; (2) the volumes and associated costs of converting crude helium into pure helium; and (3) refinery capacity and future capacity estimates. 50 U.S.C. § 167d(b)(8)(A). We refer to this as the act's disclosure requirement. Furthermore, the act defines a "qualifying domestic helium transaction" as any agreement entered into or renegotiated during the preceding 1-year period in the United States for the purchase or sale of at least 15 million standard cubic feet of crude or pure helium to which any storage contract holder is a party. 50 U.S.C. § 167(10).
- **Price-setting.** The act requires BLM to annually establish, as applicable, separate sale and minimum auction prices for Phase A and B using, if applicable, and in the following order of priority: (1) the sale price of crude helium in BLM auctions; (2) price recommendations and disaggregated data from a qualified, independent third party who has no conflict of interest, who shall conduct a confidential survey of qualifying domestic helium transactions; (3) the volume-weighted average price of all crude helium and pure helium purchased, sold, or processed by persons in all qualifying domestic helium transactions; or (4) the volume-weighted average cost of converting gaseous crude helium into pure helium. 50 U.S.C. § 167d(b)(7).
- **Auction and sale schedule and frequency, and one-time sale.** For fiscal year 2015, the act only permits one auction, followed by one

¹⁶The condition went into effect 90 days after the act's enactment. Since all sales held after the act's enactment occurred after the 90 days, refiners have been subject to the condition.

¹⁷S. Rep. No. 113-83, at 13 (2013).

sale that had to occur no later than August 1, 2014.¹⁸ Payment for the sale had to be made by September 26, 2014. 50 U.S.C.

§ 167d(b)(12). The act also requires a one-time sale of helium from the amounts available in fiscal year 2016 that had to occur no later than August 1, 2014, with payment no later than 45 days after the sale date. 50 U.S.C. § 167d(b)(13)(A).

- **Auction quantities.** The act generally requires BLM to auction an increasing amount of the helium made available each fiscal year, beginning with 10 percent in fiscal year 2015 and increasing by an additional 15 percentage points annually through fiscal year 2019, and then with 100 percent being auctioned in fiscal year 2020.¹⁹ 50 U.S.C. § 167d(b)(2). However, the volume auctioned may be adjusted upward if the Secretary of the Interior determines it necessary to increase participation in auctions or increase returns to taxpayers.²⁰ 50 U.S.C. § 167d(b)(5)(B).
- **Storage and delivery.** The act requires BLM to establish a schedule for transportation and delivery of helium using the federal system that ensures timely delivery of helium purchased at auction or sale, among other things. 50 U.S.C. § 167c(e)(2). The act also requires BLM to impose a fee on contract holders that accurately reflects the economic value of helium storage, withdrawal, and transportation services. The fee imposed cannot be less than the amount required for contract holders to reimburse Interior for the full costs of providing those services, including capital investments in the federal helium system.²¹ 50 U.S.C. § 167c(a),(b).

¹⁸The act does not specify whether only one auction and sale is permitted during fiscal year 2015 or whether only one auction and sale of helium for delivery in fiscal year 2015 is permitted. Officials with Interior's Office of the Solicitor said this provision refers to one auction and one sale of helium for delivery in fiscal year 2015.

¹⁹For example, if BLM auctioned 10 percent of the helium it made available in fiscal year 2015, it would auction 25 percent of the helium made available in fiscal year 2016, and 40 percent of the helium made available in fiscal year 2017, etc.

²⁰The auction quantity may also be adjusted downward if the Secretary of the Interior determines it is necessary to minimize market disruptions that pose a threat to the economic well-being of the country and only after submitting a written justification to relevant congressional committees. 50 U.S.C. § 167d(b)(5)(A).

²¹The act defines the federal helium system as the federal helium reserve, the storage reservoir, the pipeline, and certain other infrastructure. 50 U.S.C. § 167(4).

BLM published a final notice in the *Federal Register* on July 23, 2014, that specified the agency's plan for implementing (1) the auction of a portion of the helium that will be delivered in fiscal year 2015, (2) the sale of a portion of the helium that will be delivered in fiscal year 2015, and (3) the one-time advance sale of a portion of the helium that will be delivered in fiscal year 2016 (see table 1).²² For the auction, BLM's notice stated that auction participants would compete to purchase set volumes, or lots, of helium. For the sales, the notice stated that each of the four participating refiners would receive an amount of helium based on their percentage share of the total estimated refining capability in 2000. The notice also contained, among other things, BLM's formula for calculating the minimum auction price and the sales price; BLM's plans for delivering helium purchased in the auction and sale during fiscal year 2015, as well as delivery plans for helium purchased prior to the 2013 act's enactment; and BLM's plan for collecting information about tolling agreements between refiners and other parties.

Table 1: Dates and Helium Volumes for Auction or Sale at Events Held During the Summer of 2014

Helium volume in millions of cubic feet			
Event	Date of event	Helium volume for auction or sale ^a	Description
Fiscal year 2015 auction	July 30, 2014	93	Competitive auction of helium to be made available for delivery in fiscal year 2015; open to qualified nonrefiners and refiners.
Fiscal year 2015 sale	Aug. 14, 2014	835	Noncompetitive sale of helium to be made available for delivery in fiscal year 2015; open to refiners.
Fiscal year 2016 one-time advance sale	Aug. 14, 2014	250	Noncompetitive one-time advance sale of helium to be made available for delivery in fiscal year 2016; open to refiners.
Total		1,178	

Source: GAO analysis of Bureau of Land Management data. | GAO-15-394

^aFor each of these three events, 100 percent of the helium made available was purchased.

²²79 Fed. Reg. 42808 (July 23, 2014).

Refiners Bought All Helium Offered at Auction and Sales for Higher Than Expected Prices

During the summer of 2014, refiners purchased all the helium offered during BLM's first competitive helium auction and in two subsequent noncompetitive sales at prices that were higher than expected by participants and BLM officials. Two refiners purchased all the auctioned helium. BLM and refiners and nonrefiners cited multiple, possible reasons for the auction's outcomes, including that refiners had an advantage over nonrefiners in terms of having existing infrastructure to refine helium without paying another company to do so. For the two sales, held in August 2014, BLM used the average auction price to help set the sales price, and the agency restricted the sales to refiners.

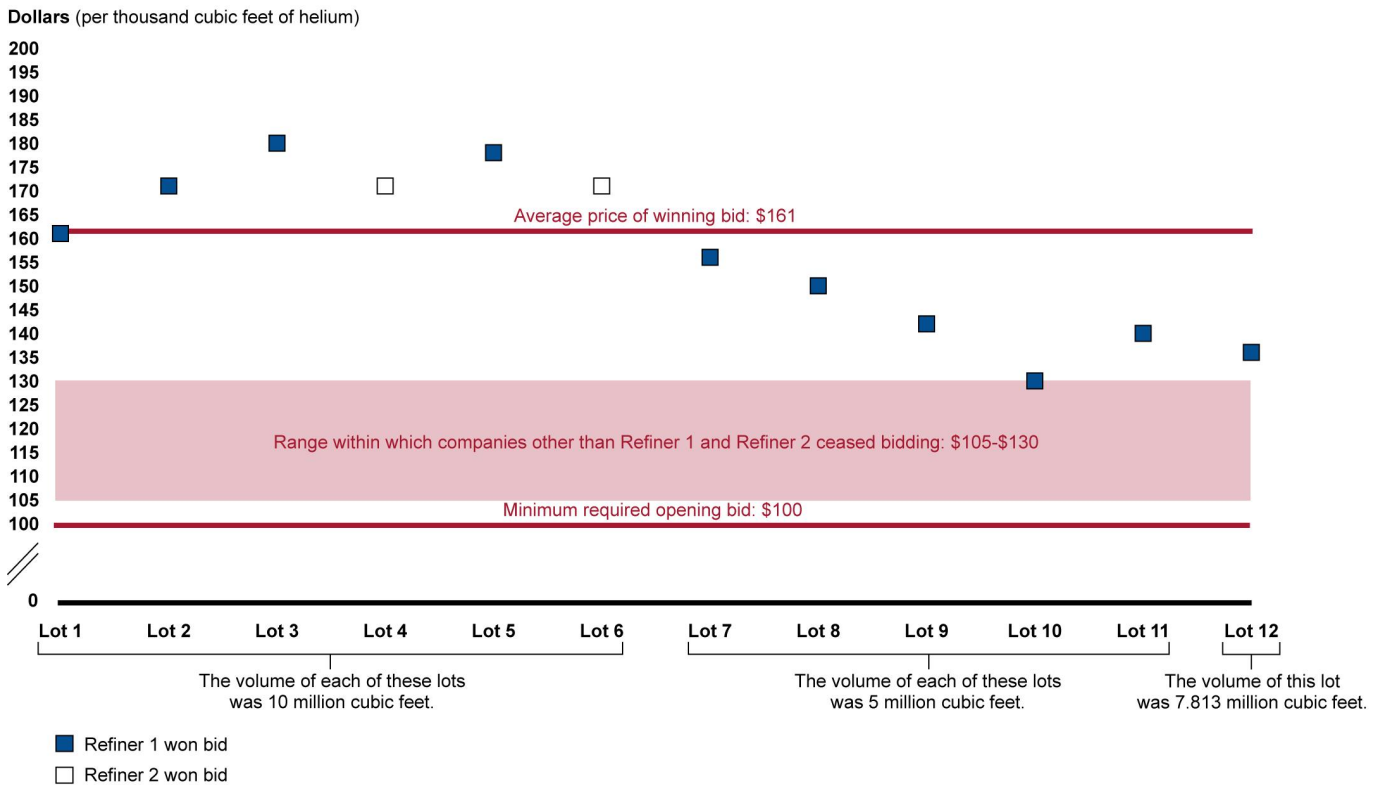
Two Refiners Won All the Auctioned Helium at an Average Price of \$161 per Thousand Cubic Feet

Two refiners purchased all 93 million cubic feet of helium that BLM auctioned for delivery in fiscal year 2015 for an average price of \$161 per thousand cubic feet. Specifically, 13 companies, including refiners and nonrefiners, participated in the agency's first-ever competitive helium auction, held in July 2014, but most stopped bidding well below the final auction prices for 12 lots of helium.²³ BLM set the minimum starting bid for each lot at \$100 per thousand cubic feet, an increase over the fiscal year 2014 sales price of \$95 per thousand cubic feet.²⁴ At one point during bidding, the auction price rose as high as \$180 per thousand cubic feet. We observed that participants who did not win at the auction stopped bidding when prices reached from \$105 to \$130 per thousand cubic feet (see fig. 1).²⁵

²³The type of companies that participated at the auction ranged from a local gas company to multinational corporations.

²⁴BLM held two sales of helium it made available for delivery in fiscal year 2014, one in January 2014, and one in May 2014, both of which were priced at \$95 per thousand cubic feet.

²⁵We observed a recording of the July 2014 auction to determine the range within which companies other than the two winning bidders stopped bidding. Because the video camera did not capture every bid made in every lot, the range is based on our best estimate of the bidding that took place. In addition, in interviews, we asked the refiners and nonrefiners that participated in the auction about their recollections of the bidding.

Figure 1: Results of the Bureau of Land Management's July 2014 Auction of Helium to Be Delivered in Fiscal Year 2015

Source: GAO analysis of Bureau of Land Management data. | GAO-15-394

Note: The range within which companies other than the two winning bidders stopped bidding is primarily based on our observation of a recording of the July 2014 auction. Because the video camera did not capture every bid made in every lot, the range is based on our best estimate of the bidding that took place. In addition, in interviews, we asked the refiners and nonrefiners that participated in the auction about their recollections of the bidding.

Reaction to the auction's outcome varied among refiners, nonrefiners, and BLM officials. Most of the representatives of refiners and nonrefiners we interviewed stated that the auction prices were too high for crude helium, especially during a time of global excess of helium supplies. A representative from one refiner, for example, called the auction prices "outrageously high." Others said the average price was not an indication of the market price for crude helium, especially since the 93 million cubic feet auctioned by BLM constituted a very small portion of the total volume

of crude helium sold in a year in the global market.²⁶ Some representatives of nonrefiners said that auction prices for crude helium reached levels similar to some prices for refined liquid helium, which is typically more expensive than crude helium.²⁷ Others said that the auction failed to increase the number of purchasers of federal helium beyond companies that already participated in the federal helium program.

BLM and some representatives of nonrefiners and a refiner, however, said the auction was a success for the federal government since it generated about \$15 million in revenue. A senior BLM helium program official said the auction exceeded revenue expectations, and an agency press release stated that BLM achieved a key objective of the act: to maximize the value of federal helium through a market-driven process.²⁸ In addition, representatives from a refiner and nonrefiner stated that the free market nature of the auction was a good way to determine the market price for crude helium. Also, BLM officials and a representative of one nonrefiner stated that the high auction prices were beneficial because they will help spur development of new helium supplies. The representative explained that, when the price of crude helium increases, the return from selling helium increases. As the return increases above the cost of production, it provides an incentive to find and produce more helium because the exploration of new helium resources becomes more economical.

²⁶The U.S. Geological Survey estimated that global production of crude helium equaled about 6.5 billion cubic feet in 2014. See U.S. Geological Survey, *Mineral Commodity Summaries*, January 2015.

²⁷For example, according to the U.S. Geological Survey, the estimated price range for Grade-A gaseous helium, which is refined, was about \$200 per thousand cubic feet in fiscal year 2014, compared with BLM's price of \$95 per thousand cubic feet for crude helium in that same period. Refined liquid helium is more expensive than Grade-A gaseous helium because it has gone through an additional liquefaction process.

²⁸According to the House committee report accompanying the Helium Stewardship Act of 2013, the law's purpose was to complete the privatization of the federal helium reserve in a competitive market fashion that ensures stability in the helium markets while protecting the interests of American taxpayers. H.R. Rep. No. 113-42, at 8 (2013).

BLM and Refiners and Nonrefiners Cited Multiple, Possible Reasons for Auction Outcomes

In interviewing BLM officials and representatives of refiners and nonrefiners and reviewing BLM's July 2014 *Federal Register* notice, we identified multiple, possible explanations for why refiners won all the auctioned helium for higher than expected prices. Specifically:

- **Refiners may have been more willing to pay higher prices at the auction since their costs for refining crude helium are lower than those of nonrefiners.** According to BLM officials, refiners utilize the infrastructure they already have to refine crude helium. In contrast, nonrefiners must pay another company to refine, or toll, their helium, which represents additional costs that refiners do not pay. As a result, according to representatives of nonrefiners, the costs of purchasing auctioned helium and turning it into refined helium are lower for refiners than nonrefiners, giving refiners an advantage at the auction.
- **Nonrefiners may not have bid higher at the auction because they did not know the costs and delivery terms for tolling.** Representatives of nonrefiners we interviewed said that few tolling agreements were in place prior to the auction. Those agreements would have specified the rates for tolling any helium they purchased and provided details on when, where, and how purchased helium would be delivered. As a result, the nonrefiner representatives said they were unable to calculate the total costs associated with purchasing and refining crude helium during the auction. By not knowing the tolling costs in advance of the auction, nonrefiners could have bid more conservatively than they might have otherwise. In addition, according to one nonrefiner representative, not knowing delivery terms before the auction made it difficult to plan ahead and prepare to receive the helium.
- **Refiners' expectation of paying less for helium at two subsequent, noncompetitive sales may have led refiners to pay higher prices at the auction.** Before the auction, BLM announced in its July 2014 *Federal Register* notice that it would make more than 1 billion cubic feet of helium available exclusively to refiners in two sales of helium to be delivered in fiscal year 2015 and fiscal year 2016, as compared with the 93 million cubic feet of helium to be auctioned. The notice further specified that the average price paid by auction winners would account for a small part—10 percent—of the

sale price.²⁹ According to BLM officials, when the amount of helium purchased by refiners at the higher auction price was added to the amount of helium purchased by refiners at the lower sales price, the refiners' overall average price was considerably lower than the auction price. Specifically, refiners paid an average of \$161 per thousand cubic feet for the auctioned helium, but refiners paid \$106 per thousand cubic feet for helium purchased at the two sales. When the volumes and prices of the auction and sales were added together, the refiners' overall purchase price averaged less than \$120 per thousand cubic feet. BLM officials and representatives of nonrefiners told us that the refiners' ability to average auction prices with sale prices provided an advantage to refiners because nonrefiners were not eligible to participate in the two sales held in August 2014 and therefore could not average auction and sale prices as refiners could.

- **Changes to the way BLM proposed to deliver helium purchased at the auction may have provided an incentive to refiners to purchase as much helium at the auction as possible.** Specifically, BLM had announced in its July 2014 *Federal Register* notice that it would reserve some of its pipeline delivery capacity in fiscal year 2015 for helium purchased at the auction.³⁰ Based on our review of the notice, purchasing helium at the auction would have allowed refiners to take advantage of the new delivery method and maximize volumes of helium they would receive through the pipeline.

²⁹BLM described its sale price formula in section 2.04 of its July 2014 *Federal Register* notice. 79 Fed. Reg. 42808, 42811 (July 23, 2014).

³⁰BLM described its fiscal year 2015 delivery formula in section 3.03 of the *Federal Register* notice. The formula gives first priority to delivery of helium intended for federal users, and then provides for delivery of (1) helium purchased by refiners at sales; (2) helium purchased by refiners prior to the act's enactment and stored in the federal reservoir; (3) helium purchased by refiners or nonrefiners at the auction; and (4) helium purchased by nonrefiners in the Phase A sales. 79 Fed. Reg. 42808, 42813 (July 23, 2014).

The Auction Price Affected BLM's Sales Price, and Sales Were Restricted to Refiners

After the auction, BLM sold more than 1 billion cubic feet of helium in the two August 2014 sales to the four refiners at a higher than expected price.³¹ BLM missed the August 1, 2014, statutory deadlines for holding the sales by 2 weeks; however, the agency reported that it received final payments by the applicable statutory deadlines.³² As we previously stated, BLM used the average auction price to help set the price of \$106 per thousand cubic feet used in both sales. As we found in July 2014,³³ BLM based its price for these two sales primarily on the fiscal year 2014 sales price, adjusted for inflation, but the agency also used the average auction price to account for 10 percent of the sales price.³⁴ As a result, BLM's sales price increased \$11 per thousand cubic feet compared with the fiscal year 2014 price, and BLM received approximately \$115 million in revenue from the two sales.

We found in July 2014 that BLM selected its method for calculating the price for the two sales because agency officials said they did not have time to contract for an annual market survey of qualifying domestic helium transactions by an independent third party.³⁵ This market survey is one of the options provided for in the act's price-setting provision. BLM officials also said they did not give the auction price greater weight when setting the sale price because they did not want to create a significant price increase that would negatively affect federal users and other end users. However, some representatives of refiners and nonrefiners said that they disagreed with BLM's decision to consider the auction price when setting the sale price because the auction accounted for a small amount of helium when compared with the volume of helium that is sold on the global market. Nevertheless, the act's price-setting provision authorizes BLM to use the auction price to set sales prices and directs BLM to give priority to this approach.

³¹The amount of helium available for the fiscal year 2015 sale was 835 million cubic feet; for the fiscal year 2016 one-time sale, the amount was 250 million cubic feet.

³²BLM officials conducted the two sales on August 14, 2014. The agency reported that it received full and final payments from the refiners for both sales by September 26, 2014, which was the statutory deadline for payment for the fiscal year 2015 sale and before the deadline for payment for the fiscal year 2016 one-time sale.

³³[GAO-14-751T](#).

³⁴BLM calculated the sales price by taking 10 percent of the average auction price and adding it to 90 percent of the adjusted fiscal year 2014 sales price.

³⁵[GAO-14-751T](#).

BLM restricted the two August 2014 sales solely to refiners, which was a departure from the agency's prior practice of offering a small portion of sales to nonrefiners.³⁶ BLM officials said they took this approach because they interpreted the act as intending to have the auction replace the portion of the sales that had previously been made available to nonrefiners. Most representatives of nonrefiners, however, told us that they disagreed with this interpretation, stating that the act does not require BLM to eliminate the portion of sales open to nonrefiners. Some nonrefiners told us that having a guaranteed supply of helium, even of small volumes, would help level the playing field with refiners since the refiners can participate in the sales, guaranteeing their supply. Moreover, since nonrefiners were not eligible to participate in the sales and were outbid at the auction, nonrefiners purchased none of the federal helium that BLM made available for delivery in fiscal year 2015.³⁷ As a result, the number of companies purchasing helium from BLM for delivery in fiscal year 2015 compared with fiscal year 2014 decreased from eight to four.

BLM Clarified Its Definition of Excess Refining Capacity but Does Not Have Full Assurance That Refiners Are Satisfying the Tolling Provision

BLM has taken steps to address challenges we found in July 2014 with its administration of the act's tolling provision, specifically by clarifying its definition of excess refining capacity.³⁸ However, the agency does not have full assurance that refiners are satisfying the act's tolling provision for various reasons. Among the reasons are that BLM has not obtained complete information about refiners' efforts to satisfy the tolling provision and has not determined whether tolling rates offered by refiners are commercially reasonable. Representatives of nonrefiners have raised concerns that BLM's unwillingness to act if refiners do not satisfy the provision may result in less competition in helium auctions.

³⁶In the past, BLM divided sale volumes into two portions, one offered to refiners, and one offered first to nonrefiners. For example, in the January and May 2014 sales, BLM offered 10 percent of the total volume of helium that it made available for sale to the nonrefiners, and the refiners were offered 90 percent of the total volume, excluding helium for federal users. Prior to fiscal year 2014, one portion was offered only to refiners and the other portion was offered to all qualified bidders.

³⁷Nonrefiners will have an opportunity to purchase additional volumes of the helium BLM will make available for delivery in fiscal year 2016 since the agency will hold an auction for a portion of this helium in the summer of 2015.

³⁸[GAO-14-751T](#).

BLM Clarified Its Definition of Excess Refining Capacity

Since its implementation of the first phase of the act, BLM has taken steps to clarify its definition of excess refining capacity to help improve reporting of excess capacity by refiners. In our July 2014 testimony, we found that BLM asked refiners to report excess refining capacity in January 2014 as a condition of the Phase A sales, but the agency did not define the term “excess refining capacity” because BLM officials stated that they were still interpreting the act at that time.³⁹ We found that, as a result, refiners used different methods for calculating excess capacity reported to BLM. Also, BLM and some nonrefiners questioned the accuracy of the total volume of excess capacity that refiners reported in January 2014. In June 2014, BLM posted a draft data collection form on its website for refiners to use when reporting excess refining capacity. This draft form included a definition of excess refining capacity. For example, refiners were to report “planned demand” as part of their determination of excess capacity. However, some nonrefiners commented to BLM that this definition left room for different interpretations.⁴⁰ In response to comments on its draft form, BLM published the final version of the form on its website on July 23, 2014, adding more specificity to its definition of excess refining capacity. For example, rather than asking refiners to report “planned demand,” BLM clarified that refiners should report “forecasted crude helium demand” and defined that term.⁴¹

Refiners reported their forecasted excess capacity for fiscal year 2015 to BLM in late July 2014 and, according to BLM officials, the definition in the final form helped improve the refiners’ reports. Specifically, refiners reported a combined forecasted excess capacity of 786.5 million cubic feet for fiscal year 2015, more than 10 times the 72 million cubic feet that refiners had reported in January 2014 as their forecasted excess capacity for the same period. Representatives of refiners told us their forecasted excess capacity numbers changed because of BLM’s more precise

³⁹[GAO-14-751T](#).

⁴⁰[GAO-14-751T](#).

⁴¹Specifically, BLM’s final form defines forecasted crude helium demand as the forecasted demand for all crude helium—including crude helium from the federal helium system, as well as from all other sources—to be processed by the helium refiner.

definition of what to report, as well as changes in the global helium market since January 2014 that freed up additional capacity in their refineries on the federal pipeline.

BLM Does Not Have Full Assurance that Refiners Are Satisfying the Tolling Provision

The act's tolling provision states that, as a condition of sale or auction, refiners must make excess refining capacity available at commercially reasonable rates to certain nonrefiners, but BLM does not have full assurance that refiners are satisfying the provision. According to language in the Senate report accompanying the act, refiners were to "make excess refining capacity available to others at commercially reasonable rates as a condition of their continued participation in helium allocations [sales] and auctions."⁴² BLM does not have this assurance because, according to BLM officials, they (1) have not obtained all relevant information about refiners' efforts to satisfy the tolling provision, (2) have not defined or identified criteria for a commercially reasonable rate, (3) have not determined what to do if a refiner does not satisfy the tolling provision, and (4) believe the agency's approach to ensuring that refiners satisfy the tolling provision is consistent with current market conditions.

BLM Has Not Obtained All Relevant Information about Refiners' Efforts to Satisfy the Tolling Provision

The act's tolling provision requires that refiners make excess refining capacity available to certain nonrefiners at commercially reasonable rates. The act, however, does not define what it means to make excess capacity available or the term "commercially reasonable rates." BLM officials told us that they consider signed tolling agreements to be evidence of refiners' satisfying the tolling provision. In addition, BLM officials said that refiners' attempts to negotiate tolling agreements that did not result in signed agreements could also satisfy the provision. This is because, if a refiner and nonrefiner do not agree on terms for tolling, the act does not require the refiner to toll.

To obtain information about signed agreements, in the July 2014 *Federal Register* notice, BLM directed refiners to report information about tolling agreements that they entered into with another party during the preceding

⁴²S. Rep. No. 113-83, at 13 (2013).

year by completing a tolling report form.⁴³ However, refiners inconsistently reported information about their signed tolling agreements on these forms. For example, some refiners reported that they had signed tolling agreements and reported the volumes of helium to be tolled under those agreements, but not all refiners reported the rates they charged for tolling. According to BLM officials, a representative of one refiner said that the refiner did not report the rate because the act does not require refiners to disclose information about agreements covering less than 15 million cubic feet of helium.⁴⁴ In contrast, another refiner reported the rates charged in tolling agreements covering less than 15 million cubic feet. Officials with Interior's Office of the Solicitor said that BLM could not require refiners to report information about signed tolling agreements for less than 15 million cubic feet in a *Federal Register* notice, but BLM may be able to require it by issuing a rule. BLM officials said they expect that many signed tolling agreements will be for less than 15 million cubic feet since nonrefiners typically accept delivery of helium in 1 million cubic feet increments. As a result, BLM officials said that having information about tolling agreements for smaller volumes from all refiners, including rates, would provide BLM with a better understanding of refiners' efforts to satisfy the tolling provision.

To obtain information about refiners' attempts to negotiate tolling agreements that did not result in signed agreements, in the July 2014 *Federal Register* notice, BLM said that refiners may also use the tolling report forms to report information about these attempts. According to officials with the Office of the Solicitor, the act does not require refiners to

⁴³The July 2014 *Federal Register* notice and the tolling report form appear to indicate that different information should be reported on the form. Specifically, the notice states that refiners should use the tolling report form to document tolling agreements that were entered into between a refiner and another party (refiner or nonrefiner). The tolling report form directs refiners to certify that the information provided on the form accurately describes the tolling agreements with nonrefiners, but it does not mention agreements with other refiners. As a result, it is not clear whether BLM expects refiners to report their tolling agreements with other refiners and nonrefiners, as indicated in the notice, or only agreements with nonrefiners, as indicated on the form.

⁴⁴The representative was referring to the act's disclosure requirement, not the act's tolling provision. Under the disclosure requirement, all storage contract holders must report, among other things, the volumes and prices of all crude and pure helium purchased, sold, or processed in qualifying domestic helium transactions. Qualifying domestic helium transactions are any agreement entered into or renegotiated during the preceding 1-year period in the United States for the purchase or sale of at least 15 million cubic feet of crude or pure helium to which any storage contract holder is a party.

report this information. Therefore, reporting information about refiners' attempts to negotiate tolling agreements is voluntary. As a result, refiners reported inconsistent information about their attempts to negotiate tolling agreements on their fiscal year 2014 tolling report forms. For example, some refiners reported that they had attempted to negotiate tolling agreements but did not report any details about the volumes or rates offered. Other refiners provided details about volumes or rates or both. The officials with the Office of the Solicitor said BLM also may need to issue a rule to require refiners to report information about attempts to negotiate tolling agreements that do not result in signed agreements. BLM officials said information about negotiations that do not result in tolling agreements would be helpful in determining the extent to which refiners with excess capacity are making it available to nonrefiners.

Nevertheless, BLM officials said that they do not plan to issue a rule to require refiners to report information about signed agreements to toll less than 15 million cubic feet of helium or about attempts to negotiate tolling agreements that do not result in signed agreements. They said they do not plan to issue a rule, in part, because the rulemaking process is time-consuming, and there are only a few years left for BLM to implement the act. BLM officials also said they were concerned that issuing a rule might delay future auctions and sales, pending final issuance of the rule. However, options may be available for the agency to shorten the rulemaking process if, for example, the conditions for issuing an interim final rule without first issuing a proposed rule for public notice and comment have been satisfied.⁴⁵ Until refiners consistently provide information about signed agreements to toll less than 15 million cubic feet

⁴⁵Under the Administrative Procedure Act, agencies are generally required to publish a notice of proposed rulemaking and provide the public with an opportunity to comment on proposed regulations prior to issuing a final rule. However, a notice of proposed rulemaking and opportunity for public comment are not required when an agency can for good cause find, and explain, that the notice and public procedure are impracticable, unnecessary, or contrary to the public interest. If BLM can find good cause for not publishing the notice and undertaking the public procedure, then it can issue an interim final rule requiring refiners to report on their tolling agreement negotiations and agreements to toll less than 15 million cubic feet. In addition, the Administrative Procedure Act generally requires agencies to delay the effective date of their final regulations until 30 days after their publication unless agencies can for good cause find, and explain, the basis for not delaying the effective date in the rulemaking. If BLM can find good cause for making the final rule effective upon publication, it can more quickly issue a rule requiring the refiners to report on their tolling agreement negotiations and agreements to toll less than 15 million cubic feet.

BLM Has Not Defined or Identified Criteria for a Commercially Reasonable Rate

of helium and about their attempts to negotiate tolling agreements, BLM cannot determine the extent to which refiners are satisfying the tolling provision by making excess capacity available at commercially reasonable rates.

BLM officials also have not defined or identified criteria for commercially reasonable rates. The act requires refiners with excess refining capacity to make it available at commercially reasonable rates to certain nonrefiners as a condition of sale or auction of helium to the refiner. However, as we found in our July 2014 testimony, BLM officials told us that they were not planning on defining commercially reasonable rates because it is more appropriate for companies or a court to make that determination.⁴⁶ At that time, BLM officials said that they would have a hard time finding that a rate included in a signed tolling agreement between a refiner and nonrefiner is not commercially reasonable since the parties involved agreed to it. As of January 2015, BLM officials said that they do not know how they would evaluate a rate offered by a refiner that did not result in a signed tolling agreement to determine if it was commercially reasonable. Representatives of refiners and nonrefiners told us they generally agreed that BLM should not set a specific rate, but they disagreed over whether BLM should play some role in determining what constitutes a commercially reasonable rate.⁴⁷ For example, at least one nonrefiner submitted comments to BLM that the agency should identify guidance for what constitutes a commercially reasonable rate. According to some comments from nonrefiners, BLM's involvement is necessary to incentivize refiners to toll since, in many instances, nonrefiners and refiners are competitors. BLM officials told us that they are looking for ways to incentivize tolling, but the officials also said it is not clear how or whether they should be involved in setting commercially reasonable rates.

BLM Officials Said They Have Not Identified What to Do if Refiners Do Not Satisfy the Tolling Provision

In addition, BLM officials told us that they are not planning on taking further action with respect to the tolling provision because they have not determined what to do if refiners do not satisfy the provision. According to language in the Senate report accompanying the act, refiners were to

⁴⁶ [GAO-14-751T](#).

⁴⁷ Some nonrefiners we interviewed said that BLM should facilitate the signing of tolling agreements by, for example, a separate auction process. Officials with the Office of the Solicitor told us that the act does not authorize the agency to require that refiners participate in such a process.

“make excess refining capacity available to others at commercially reasonable rates as a condition of their continued participation in helium allocations [sales] and auctions.”⁴⁸ However, BLM officials said the tolling provision does not specify what BLM should do if a refiner does not make excess capacity available at a commercially reasonable rate. The officials said that they considered suspending a refiner that does not satisfy the tolling provision from participation in future auctions or sales, but doing so risks market disruption. The officials acknowledged, however, that such disruption is currently unlikely because, given the refiners’ significant volumes of privately owned helium stored in the reservoir, a refiner that is restricted from purchasing additional helium in auctions and sales would still be able to have its stored helium delivered.

Nonrefiner representatives have raised concerns about the consequences of BLM’s unwillingness to act if refiners do not satisfy the tolling provision. For example, some representatives of nonrefiners said that this creates a disincentive for the nonrefiners to participate and purchase helium in future auctions, which could lead to less participation in the auctions. Moreover, representatives of nonrefiners noted that they do not have much time left to purchase federal helium with 6 years remaining of helium sales and auctions.

BLM Officials Said Their Approach to Ensuring that Refiners Satisfy the Tolling Provision Is Consistent with Current Market Conditions

BLM officials said they believe that their approach to ensuring that refiners satisfy the tolling provision is consistent with current market conditions because the increased supply in the global market has reduced refiners’ and nonrefiners’ demand to have federal helium delivered from storage and tolled. The officials said that some refiners have reduced their monthly delivery amounts from the pipeline because additional helium supplies have become available from private sources. They said that these refiners are choosing to leave their helium stored in the federal storage reservoir rather than have it delivered since, unlike private sources, BLM’s storage reservoir provides a unique opportunity for storage of helium for delivery at a later date.⁴⁹ According to the BLM

⁴⁸S. Rep. No. 113-83, at 13 (2013).

⁴⁹In general, refined helium can only be stored for a short period of time after it is produced. According to BLM officials, companies that purchase crude helium from private sources must generally accept delivery of that helium when it is produced or pay for it anyway. The officials said that BLM’s current storage contract fees are low enough that companies are incentivized to keep their federal helium in storage rather than have it delivered.

officials, these market conditions should encourage tolling because refiners have excess refining capacity that could be used for tolling. However, BLM officials said they have not seen an increase in occurrences of tolling since market conditions changed.

As of the end of fiscal year 2014, refiners and nonrefiners had signed tolling agreements that covered only a small portion of the 61 million cubic feet of helium purchased by nonrefiners that needed tolling, according to BLM documents. Some representatives of nonrefiners told us they have signed or were negotiating agreements for tolling in fiscal year 2015 that would cover some additional helium. These nonrefiner representatives also said that some refiners have offered lower tolling rates since the change in market conditions. However, other representatives of nonrefiners told us they have not been successful in negotiating tolling agreements even under the current market conditions. According to BLM officials, most of the nonrefiners' helium remains untolled because the current market conditions have reduced the nonrefiners' demand for tolling. Yet, some representatives of nonrefiners told us they remain interested in signing tolling agreements. For example, one representative said a nonrefiner is still pursuing a tolling agreement because having access to its purchased helium offers some protection against changes in global supply and demand. BLM officials told us that they expect refiners and nonrefiners to sign more tolling agreements in fiscal year 2016, given that at least one company is seeking to connect a small refinery to the pipeline. Representatives from this company and some existing refiners told us that they are incentivized by the business opportunities offered by tolling for others and are actively pursuing tolling agreements with nonrefiners.

BLM Faces a Number of Decisions Related to Upcoming Helium Auction, Sale, and New Storage Contracts as It Continues to Implement the Act

As BLM continues to implement the various phases of the act, the agency faces decisions during the spring and summer of 2015 related to the upcoming fiscal year 2016 helium auction, the upcoming fiscal year 2016 helium sale, and the agency's new storage contracts.⁵⁰ First, for the fiscal year 2016 auction, BLM faces decisions on conducting a market survey to inform the minimum auction price, determining the amount of helium to make available for auction, and selecting an auction method. Second, for the fiscal year 2016 sale, BLM faces decisions on determining how to set the sale price and companies' eligibility to participate. Third, for storing, withdrawing, and delivering helium starting in fiscal year 2016, BLM faces decisions regarding new contracts with refiners and nonrefiners that have purchased federal helium.

BLM Faces Decisions Related to the Upcoming Helium Auction

In creating the agency's plan for conducting the fiscal year 2016 auction, BLM officials face decisions on how the agency will (1) conduct a market survey that will be used to inform the minimum auction price, (2) determine the amount of helium the agency will make available for auction, and (3) choose a method to conduct the auction, among other things.

BLM Plans to Conduct a Market Survey to Inform the Minimum Auction Price but Has Not Finalized the Scope of the Survey

BLM officials said the agency plans to contract with an independent third party to conduct a survey of helium transactions that will provide the basis for the agency to set the minimum auction price for the fiscal year 2016 auction, but the agency has not decided on the scope of the survey. The act's price-setting provision calls for BLM to set minimum auction prices using, among other things, if applicable, a price recommendation from a survey of qualifying domestic helium transactions (which we refer to as qualifying transactions).⁵¹ Accordingly, officials with Interior's Office of the Solicitor told us that BLM is not authorized to consider price

⁵⁰The fiscal year 2016 auction and sale is of the total volume of helium BLM will make available for delivery in fiscal year 2016, minus the volume of private storage helium that BLM will deliver and the 250 million cubic feet the agency already sold in the one-time advance sale held in August 2014.

⁵¹Specifically, the act requires BLM to use, if applicable, the "[p]rice recommendations and disaggregated data from a qualified, independent third party who has no conflict of interest, who shall conduct a confidential survey of qualifying domestic helium transactions." Qualifying transactions are any agreement entered into or renegotiated during the preceding 1-year period in the United States for the sale or purchase of at least 15 million cubic feet of crude or pure helium to which a storage contract holder is a party.

recommendations from a survey of nonqualifying transactions when setting prices.

BLM officials told us that if a third party conducted a survey solely of qualifying transactions, it would duplicate information that storage contract holders are already required to report to BLM under the act. Specifically, the act's disclosure requirement requires contract holders to disclose volumes and prices for qualifying transactions. According to BLM officials, 8 of the 11 current contract holders already disclosed the required information, and the officials plan to require the remaining 3 contract holders to disclose the information by the end of fiscal year 2015.⁵² In addition, BLM officials and some representatives of nonrefiners told us that limiting a survey to qualifying transactions may result in a price recommendation that reflects BLM's crude helium price rather than the broader market.

Nevertheless, an October 2013 helium market pricing report recommended that BLM hire a third party to conduct a survey with a scope broader than just the qualifying transactions to help BLM set a price that is more market based.⁵³ Specifically, this report recommended that BLM survey a significantly larger number of transactions than the qualifying transactions, including bulk helium transactions conducted by end users that are not storage contract holders and that involve smaller

⁵²BLM required companies participating in the Phase A sales to fulfill this requirement but did not require that all storage contract holders report the required information. BLM officials told us that they have drafted a revision to an annual survey that BLM conducts of federal helium users to include questions for all storage contract holders related to their qualifying domestic helium transactions. Under the Paperwork Reduction Act, the Director of the Office of Management and Budget must review and approve this proposed collection of information because BLM will be requiring more than 10 entities to disclose information.

⁵³BLM contracted for the October 2013 pricing report in response to a recommendation from Interior's Office of Inspector General in a November 2012 report. Specifically, the Inspector General recommended that BLM implement a new pricing process that identifies and obtains the fair market value price of helium. See J.R. Campbell and Associates, *Determination of Fair Market Value Pricing of Crude Helium*, a report prepared at the request of the Department of the Interior's Bureau of Land Management and Office of Minerals Evaluation (redacted), Oct. 15, 2013, and Department of the Interior, Office of Inspector General, *Bureau of Land Management's Helium Program*, C-IN-MOA-0010-2011 (Washington, D.C.: Nov. 9, 2012).

volumes of helium than the minimum volume for qualifying transactions.⁵⁴ According to the pricing report and economic principles, a broader survey would provide a better representation of market prices than a survey solely of qualifying transactions.

In determining the scope of the survey, BLM officials are weighing the act's price-setting provision of surveying qualifying transactions with the pricing report's recommendation of surveying a larger number of transactions that would reflect a broader market. As of February 2015, BLM officials told us they are considering having a third party conduct a broader survey that is not restricted to qualifying transactions, but they have not identified how, if at all, they would utilize information collected about additional transactions other than qualifying transactions.

BLM Is Determining How Much Helium to Auction

BLM officials told us that they are considering increasing the amount of helium the agency will auction for fiscal year 2016 above the amount set in the act. Under the act's auction quantities provision, BLM is required to auction 25 percent of the total helium available for sale or auction for fiscal year 2016, a 15 percentage point increase over fiscal year 2015, but the agency can reduce or increase that amount under certain circumstances. For fiscal year 2016, auctioning 25 percent of the available helium would mean auctioning nearly 200 million cubic feet, more than double the volume auctioned for fiscal year 2015. The act authorizes BLM to increase the percentage of helium to be auctioned beyond the amount specified in the act if the Secretary of the Interior determines it is necessary to increase participation in the auction or increase returns to the taxpayer. BLM officials said they are considering such an increase because they believe that auctioning larger volumes of helium will result in increased revenues and increased competition.

In December 2014, BLM compared different possible scenarios—including varying the percentage of helium to be auctioned—to identify different revenue outcomes. However, BLM did not take into account the current market conditions and the willingness of buyers to continue purchasing federal helium as prices increase. Depending on how buyers'

⁵⁴According to the information in the 2013 pricing report, surveying 200 to 400 helium end users about their bulk transactions should provide information on a minimum of 200 to 400 transactions. In contrast, according to information received by BLM, refiners and nonrefiners reported information on about 10 qualifying domestic helium transactions for fiscal year 2013.

BLM Is Selecting an Auction Method but Has Not Considered Maximizing Revenue

willingness to purchase federal helium is affected by price changes, BLM's estimates of revenues from certain scenarios may not be realized. According to economic principles, buyers respond to price changes by changing the amount they purchase. For example, even small increases in price could result in a large drop in the quantity purchased and a corresponding decline in revenue. BLM officials told us that they were considering consulting BLM economists to help them select an auction percentage. However, as of February 2015, BLM officials had not obtained market information or predictions of buyer behavior from the economists to inform their decision.

BLM's fiscal year 2015 auction was a live, in-person auction conducted in Amarillo, Texas, and the agency broadcast the auction in real time over the Internet for public viewing. BLM split the total volume available for auction into 12 lots, auctioned sequentially. As of January 2015, BLM officials said they intend to use the same method for the fiscal year 2016 auction, but the final method will be announced in a *Federal Register* notice expected in the spring of 2015. The act requires BLM to conduct each auction using a method that maximizes revenue to the federal government.⁵⁵ Representatives from some of the refiners and nonrefiners that participated in the auction told us they had concerns about BLM's auction method. For example, a representative from one nonrefiner questioned whether holding a sequential live auction would yield the highest revenues.

BLM officials told us they considered multiple auction methods when choosing the live auction, but that they did not assess the auction methods based on maximizing revenue. Instead, they determined which method would be most logistically practical to administer. For example, they told us that they were concerned about holding an Internet-based auction because they did not want potential technological difficulties to disrupt the auction or prevent a company from participating. Also, BLM officials said they were familiar with the live auction method because BLM uses it in other applications, such as in selling oil and gas leases. However, BLM economists told BLM helium program officials and us that there are several academic studies on different auction methods used in the past by Interior. These methods included sealed bid auctions and auctions where all lots were auctioned simultaneously rather than

⁵⁵50 U.S.C. § 167d(b)(6).

sequentially. BLM economists said that these academic studies could help identify an auction method that maximizes revenue. As of February 2015, however, BLM helium program officials had not evaluated the various methods. Without assessing each method based on revenue generation, BLM does not have assurance that the live auction method will maximize revenue, as required by the act.

BLM Faces Decisions for the Upcoming Helium Sale Regarding the Sale Price and Eligibility of New Companies to Participate

For the upcoming fiscal year 2016 sale, BLM faces decisions about how to set the sale price and determine whether a new company connecting to the pipeline will be eligible to participate in the sale. Regarding setting the sale price, BLM officials said they are considering changing how they calculate the sale price, in part to make the fiscal year 2016 auction more competitive.⁵⁶ Specifically, BLM officials said they are evaluating whether to give greater consideration to the fiscal year 2016 average auction price when setting the fiscal year 2016 sale price than they did when setting the fiscal year 2015 sale price. As previously discussed, BLM used the fiscal year 2015 average auction price to account for 10 percent of the fiscal year 2015 sale price. BLM officials said that they believe that increasing the extent to which the auction price influences the sale price should eliminate one advantage that refiners might have over nonrefiners at the auction. The officials said they think refiners might not pay as high a price for helium at the auction if there was less chance they would be paying a lower price for helium at the sale. In December 2014, BLM officials examined the potential effects of changing how they calculate the sale price—in addition to changing the auction percentage, as previously discussed. However, as with its consideration of different auction percentages, BLM did not take into account the current market conditions and the willingness of buyers to continue purchasing federal helium as prices increase when examining the effects of changing its calculation of the sale price. As of January 2015, BLM officials said they had not obtained such information to inform their decision.

Further, BLM faces a decision regarding whether new companies connecting to the pipeline will be eligible to participate in the sale as a refiner. As previously discussed, one company has initiated the process

⁵⁶BLM set the sale price formula for the 250 million cubic feet of helium it sold in the fiscal year 2016 one-time advance sale in the July 2014 *Federal Register* notice. BLM officials said they will set a separate price for selling the remainder of the helium it will make available for sale for fiscal year 2016.

of connecting a new, small refinery to the BLM pipeline. However, BLM officials said it is not clear whether the company meets the act's definition of a refiner. The act defines a refiner as a person with the ability to take delivery of crude helium from the BLM pipeline and refine the crude helium into pure helium.⁵⁷ The act, however, does not define pure helium. Therefore, BLM faces decisions on what constitutes pure helium and whether the company meets that definition. Further, if BLM determines that the new company is a refiner and is eligible to participate in sales reserved for refiners, BLM officials said they will need to identify a new method for determining the amount of helium each refiner will be eligible to purchase in the sales. Currently, BLM allocates the helium it makes available in each sale among the four refiners based on their 2000 refining capacities. With the addition of a new refiner, BLM officials said they are considering alternate methods for future sales.

BLM Faces Decisions Related to New Storage Contracts

BLM officials said they anticipate that new storage contracts, which govern storage, withdrawal, and delivery of helium from the federal storage reservoir, will go into effect on October 1, 2015. The officials said they are considering changing a number of the terms and conditions in the new contracts. For example, BLM officials said they plan to create a new contractual fee structure. BLM officials explained that they calculate fees under the current contract based on the total amount necessary to recover BLM's costs. However, for the first time, the act requires BLM to impose a fee that "accurately reflects the economic value" of the storage, withdrawal, and transportation (which we refer to as delivery in this report) services provided, and the fee cannot be less than the amount required to reimburse the Secretary of the Interior for the full costs of providing such services.⁵⁸ When calculating the economic value of storing helium in the federal reservoir, BLM officials told us they are considering calculating companies' storage fees based on the volume of helium they keep in storage, in part to encourage companies to withdraw their helium rather than store it.

BLM officials also said that they researched storage fees charged at commercial natural gas storage facilities to help determine the economic value of storing helium. The officials told us that commercial natural gas

⁵⁷50 U.S.C. § 167(11).

⁵⁸50 U.S.C. § 167c(a),(b).

storage fees are a useful point of comparison for federal helium storage fees because the federal helium reservoir functions similarly to a commercial storage facility. However, according to representatives of nonrefiners and a refiner, because the federal storage reservoir provides a unique opportunity for companies to store their purchased helium until they request its delivery at a later date, the reservoir's storage capability has economic value in addition to the value associated with commercial natural gas storage facilities. BLM officials said that the fact that the gas stored in the federal reservoir has a higher helium content than other storage facilities is irrelevant when considering storage fees.

BLM officials said they are also considering including new fees in the new contracts, in part to recover costs that are not currently being captured. According to BLM officials, one such fee would allow BLM to recover costs associated with refiners who do not accept delivery of helium after they request it from BLM. Currently, refiners have the option of not accepting delivery of requested helium, which has led BLM to reinject undelivered helium from the pipeline back into the reservoir. BLM officials said they reinjected approximately 46 million cubic feet of helium from May to November 2014, in part, because refiners did not accept delivery of all helium BLM delivered into the pipeline. The officials said they anticipate that reinjection will continue to some extent. This reinjection negatively affects BLM's ability to maximize withdrawal of helium from the reserve, according to BLM officials. For example, as a result of past and continuing reinjections, BLM technical consultants estimated that the agency will be able to produce roughly 500 million cubic feet less helium from the reservoir than originally anticipated by the end of fiscal year 2021. BLM officials told us that they are continuing to evaluate the new fee structure as part of the negotiations over the new contracts, which they expect will continue into the spring of 2015.

Conclusions

BLM's implementation of the Helium Stewardship Act of 2013 is a work in progress. BLM has implemented the first phase of the act and taken initial steps to ensure that refiners satisfy the act's tolling provision. However, additional information about (1) refiners' signed agreements to toll less than 15 million cubic feet and (2) the attempts refiners have made to negotiate tolling agreements that did not result in signed agreements would provide BLM with better assurance that refiners are satisfying the tolling provision. BLM currently relies on the voluntary reporting of this information, but not all refiners have reported it. Requiring refiners to report this information may necessitate BLM undertaking a lengthy rulemaking, according to officials in Interior's Office of the Solicitor, but

other options may be available for the agency to shorten the rulemaking process if, for example, the conditions for issuing an interim final rule have been satisfied. Without information about signed agreements to toll less than 15 million cubic feet of helium and about refiners' unsuccessful attempts to negotiate tolling agreements, BLM cannot determine the extent to which refiners are satisfying the tolling provision by making excess capacity available at commercially reasonable rates.

BLM is to select a method for conducting the fiscal year 2016 auction, and agency officials said they plan to use the same live auction method the agency used to conduct the fiscal year 2015 auction. The act requires BLM to use an auction method that maximizes revenue. However, the agency did not assess the auction methods it considered based on maximizing revenue. Several academic studies that examined different auction methods used previously by Interior are available for helium program officials to consult to help BLM identify an auction method that maximizes revenue. Without assessing each method based on revenue generation, BLM does not have assurance that the live auction method will maximize revenue, as required by the act.

Recommendations for Executive Action

To provide the agency with better information to support its decisions when implementing the act, we recommend that the Secretary of the Interior direct the Director of BLM to take the following two actions:

- issue a rule—perhaps an interim final rule if BLM finds there is good cause to do so, given the time constraints—to require refiners to report information about signed agreements to toll less than 15 million cubic feet of helium and about refiners' attempts to negotiate tolling agreements that do not result in signed agreements; and
- assess auction methods based on revenue generation, using available information, and select a method that would maximize revenue for the upcoming helium auction.

Agency Comments and Our Evaluation

We provided a draft of this report for review and comment to the Department of the Interior. In its written comments, reproduced in appendix I, Interior generally agreed with our findings and concurred with our second recommendation to assess auction methods and select the

method that would maximize revenue, but the agency did not concur with our first recommendation.

Specifically, Interior did not concur with our first recommendation to issue a rule to require refiners to report certain information about signed tolling agreements and attempts to negotiate tolling agreements. In its written comments, Interior stated that existing mechanisms are providing BLM with sufficient information for the agency to administer the tolling provision, and that BLM is not in a position to develop a rule due to reduced resources, current workloads, and other high priority rulemakings and initiatives in which the agency is engaged. Also, Interior stated that the expense and time necessary to undertake a rule outweigh any immediate benefit and that given the amount of time it is likely to take to promulgate the rule, the federal helium program would likely be nearing its conclusion by the time such a rule is in place.

We do not agree that existing mechanisms are providing BLM with the information it needs to have full assurance that refiners are satisfying the tolling provision. BLM has obtained some of the relevant information from refiners. However, refiners' reporting of certain information—specifically, signed agreements to toll less than 15 million cubic feet and their attempts to negotiate tolling agreements that did not result in signed agreements—is voluntary, and not all refiners provided this information to BLM. We continue to believe that BLM needs this information to determine the extent to which refiners are satisfying the tolling provision.

We recognize that Interior and BLM must consider current workloads and other priorities when determining how to expend limited resources. However, if BLM does not issue a rule to require refiners to report this information, the agency cannot determine the extent to which refiners are making excess capacity available at commercially reasonable rates. As described in the report, BLM may have options for shortening the rulemaking process, which could reduce the resources necessary to issue a rule. Even if BLM cannot shorten the rulemaking process by, for example, issuing an interim final rule, BLM will continue implementing the act through fiscal year 2021, and the agency's administration of the tolling provision could continue to affect nonrefiners' participation in the auctions. We continue to believe that undertaking a rulemaking is necessary so that BLM can have better assurance that refiners are satisfying the tolling provision throughout the agency's implementation of the act.

We are sending copies of this report to the appropriate congressional committees, the Secretary of the Interior, and other interested parties. In addition, this report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or fennella@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to the report are listed in appendix II.

A handwritten signature in cursive script that reads "Anne-Marie Fennell". The signature is written in black ink and is positioned above a horizontal line.

Anne-Marie Fennell
Director, Natural Resources and Environment

Appendix I: Comments from the Department of the Interior



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240

MAR 31 2015



Ms. Anne-Marie Fennell, Director
Natural Resources and Environment
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Ms. Fennell:

Thank you for the opportunity to review and comment on the Government Accountability Office (GAO) draft report titled, *Bureau of Land Management: Federal Helium Program regarding More Information Needed to Implement the Helium Stewardship Act of 2013* (GAO-15-394).


The report contained two recommendations directed to the Director of the Bureau of Land Management (BLM). The Department of the Interior (Department) generally agrees with the findings and concurs with the second recommendation to evaluate auction formats to determine which format will maximize revenue.

With regard to the first recommendation related to tolling, while your report acknowledges that “officials from the Department’s Office of the Solicitor said that BLM **may need** [emphasis added] to issue a rule to require refiners to report about their attempts to negotiate tolling agreements”, the BLM does not concur with the recommendation to issue a rule for this purpose.

Given that the existing mechanisms are providing the BLM with what the Bureau believes is needed, and due to reduced resources in the BLM, current workloads, and the number of other high priority rulemakings and initiatives in which the BLM is currently engaged, the Department agrees with the BLM that it is not in a position to develop the rule recommended by the GAO at this time. Furthermore, we agree with the BLM that the expense and time necessary to undertake this rulemaking outweighs any immediate benefit that would likely be derived from it. In addition, given the amount of time it is likely to take to promulgate the rule, the program would likely be nearing its conclusion by the time any new rule could be implemented.

Thank you again for providing us with the opportunity to review and comment on this report. If you have any questions, please contact Robert Jolley, Field Manager, Amarillo Field Office, at 806-356-1002 or LaVanna Stevenson, BLM Audit Liaison Officer, at 202-912-7077.

Sincerely,


James R. Lyons
Deputy Assistant Secretary
Land and Minerals Management

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Anne-Marie Fennell, (202) 512-3841 or fennella@gao.gov

Staff Acknowledgments

In addition to the individual named above, Jeff Malcolm (Assistant Director), Cheryl Arvidson, Carol Bray, Cheryl M. Harris, Josie H. Ostrander, Leslie Kaas Pollock, Dan Royer, and Jeanette Soares made significant contributions to this report.

Appendix III: Accessible Data

Data Table for Figure 1: Results of the Bureau of Land Management's July 2014 Auction of Helium to Be Delivered in Fiscal Year 2015

Lot Number	Volume (MMcf)	High Bid	Bidder
Lot Number 1	10	\$161	Air Products
Lot Number 2	10	\$171	Air Products
Lot Number 3	10	\$180	Air Products
Lot Number 4	10	\$171	Praxair
Lot Number 5	10	\$178	Air Products
Lot Number 6	10	\$171	Praxair
Lot Number 7	5	\$156	Air Products
Lot Number 8	5	\$150	Air Products
Lot Number 9	5	\$142	Air Products
Lot Number 10	5	\$130	Air Products
Lot Number 11	5	\$140	Air Products
Lot Number 12	7.813	\$136	Air Products

Source: GAO analysis of Bureau of Land Management data. GAO-15-394.

Average price of winning bid: \$161

Range within which companies other than Refiner 1 and Refiner 2 ceased bidding: \$105-\$130

Minimum required opening bid: \$100

Lots 1-6: The volume of each of these lots was 10 million cubic feet.

Lots 7-11: The volume of each of these lots was 5 million cubic feet.

Lot 12: The volume of this lot was 7.813 million cubic feet.

Note: The range within which companies other than the two winning bidders stopped bidding is primarily based on our observation of a recording of the July 2014 auction. Because the video camera did not capture every bid made in every lot, the range is based on our best estimate of the bidding that took place. In addition, in interviews, we asked the refiners and nonrefiners that participated in the auction about their recollections of the bidding.

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